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| 10/567,578 | 02/08/2006 | Takuya Chiba | 282343US6PCT | 2524 |
| 22850 | 7590 | 03/11/2009 | | |
| OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314 | | | EXAMINER VILLECCO, JOHN M | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2622 | |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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|------------------------------|--------------------------------------|-------------------------------------|--|
| Office Action Summary | Application No. 10/567,578 | Applicant(s) CHIBA ET AL. | |
| | Examiner JOHN M. VILLECCO | Art Unit 2622 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 December 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,5 and 6 is/are rejected.
- 7) ☒ Claim(s) 2 and 4 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 December 2008 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed December 11, 2008 have been fully considered but they are not persuasive.
2. Regarding independent claims 1 and 3, applicant claims "an image pickup device formed from a plurality of pixels, each of which can perform any of an exposure operation and a reading operation thereof at a timing different from that of the other". Applicant argues that this limitation claims that the different timings are in relation to each pixel. However, as interpreted by the Examiner in the previous office action, the wording of the claim limitation can be read as each of the pixels of the image sensor being capable of performing exposure and reading at different timings. That is, the exposure and reading operations are performed at different times for each pixel in the image sensor. In this case, as explained in the previous office action, Figure 2 of Nakajima shows that the exposure operation and the reading operation are performed at different timings for each pixel of the image sensor. In addition, applicant's claim language "of the other", is in the singular form. It can be reasonably interpreted that "the other" is referring to the other of the exposure and reading operations and not the pixel, since the image sensors disclosed in applicant's invention have more than two pixels. As per MPEP § 2111, the Examiner to give the claim language its broadest reasonable interpretation. Thus, the Examiner maintains that the aforementioned claim language can be read as the exposure and reading operations being performed at different timings for each pixel.

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3. As for the 103 rejection, applicant argues that one of ordinary skill in the art would not have found it obvious to modify Nakajima to be a CMOS sensor, since changing to a CMOS sensor would change the principle of operation of the CCD sensor of Nakajima. The Examiner respectfully disagrees with this assertion. As was established in the previous office action, it is well known in the art that CMOS sensors are capable of performing exposing and reading operations at different timings. Therefore, since CMOS sensors are capable of the same operation as a CCD sensor, it does not change the principle of operation. As evidence of this the Examiner would like to point out U.S. Patent No. 7,274,009 which shows a CMOS sensor which performs exposing and reading operations at different timings and also starts the exposure of all of pixels of the array at the same time.

4. For the reasons stated above the rejection from the previous office action will be repeated.

Claim Objections

5. Claims 2 and 4 are objected to because of the following informalities:

- In line 8-9 of claim 2, applicant recites the phrase “on image recording apparatus”. This appears to be a typographical error and that the applicant meant to use the phrase – an image recording apparatus –.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. **Claims 1 and 3 are rejected under 35 U.S.C. 102(b) as being anticipated by Nakajima (U.S. Patent No. 6,069,659).**

8. Regarding *claim 1*, Nakajima discloses a camera which determines camera settings using a preliminary flash. More specifically and as it relates to the applicant's claims, Nakajima discloses an imaging apparatus comprising a flash (strobe section, 7) for emitting light onto an object, an image pickup device (CCD, 1) formed of a plurality of pixels, each of which can perform any of an exposure operation and a reading operation thereof at a timing different from that of the other (see Figure 2 in which CCD integration and CCD transfer take place at different times), a detector circuit (CPU, 6; col. 4, lines 1-10) for detecting a brightness of image information formed by the image pickup device, and a control circuit (also CPU, 6; col. 3, lines 18-21) for controlling operation of the image pickup device and the detector circuit. The control circuit (CPU, 6) causes the flash to fire a pre-flash (col. 4, lines 15-24) before a main flash operation, causes the image pickup device (CCD, 1) to form an image at the time the pre-flash, and causes the detector circuit to detect the brightness of the image information formed at the time the pre-flash, to compute an amount of main flashing light to be fired by the flash (col. 4, lines 40-47). Although not specifically disclosed in Nakajima, one of ordinary skill in the art would recognize that CCD image sensors begin an exposure period for all pixels at the same time

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(i.e. simultaneously). In fact, applicant even suggests on page 6 of the specification that CCD's operate in such a manner. Furthermore, Figure 2 of Nakajima suggests that the pixels of the CCD have the same integration time and that they integrate at the same time (t_3). Therefore, it is clear that since Nakajima is a CCD that it operates to start the exposure operation simultaneously for all of the pixels at the time the pre-flash.

9. As for **claim 3**, Nakajima discloses a camera which determines camera settings using a preliminary flash. More specifically and as it relates to the applicant's claims, Nakajima discloses an imaging apparatus comprising a flash (strobe section, 7) for emitting light onto an object, an image pickup device (CCD, 1) formed of a plurality of pixels, each of which can perform any of an exposure operation and a reading operation thereof at a timing different from that of the other (see Figure 2 in which CCD integration and CCD transfer take place at different times), a detector circuit (CPU, 6; col. 4, lines 1-10) for detecting a brightness of image information formed by the image pickup device, and a control circuit (also CPU, 6; col. 3, lines 18-21) for controlling operation of the image pickup device and the detector circuit. The control circuit (CPU, 6) causes the flash to fire a pre-flash (col. 4, lines 15-24) before a main flash operation, causes the image pickup device (CCD, 1) to form an image at the time the pre-flash, causes the detector circuit to detect the brightness of the image information formed at the time the pre-flash, causes the image pickup device to form a before pre-flash image with the flash not fired before the pre-flash operation (col. 3, lines 53 to column 4, line 14), and causes the detector circuit to detect the brightness of image information formed before the pre-flash, to compute a differential value obtained from the brightness information formed before the pre-flash and the brightness of image information formed during the pre-flash (col. 4, lines 29-47) to compute an

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amount of main flashing light to be fired by the flash (col. 4, lines 40-47). Although not specifically disclosed in Nakajima, one of ordinary skill in the art would recognize that CCD image sensors begin an exposure period for all pixels at the same time (i.e. simultaneously). In fact, applicant even suggests on page 6 of the specification that CCD's operate in such a manner. Furthermore, Figure 2 of Nakajima suggests that the pixels of the CCD have the same integration time and that they integrate at the same time (t3). Therefore, it is clear that since Nakajima is a CCD that it operates to start the exposure operation simultaneously for all of the pixels at the time the pre-flash.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. **Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakajima (U.S. Patent No. 6,069,659).**

12. Regarding *claim 5*, as mentioned above in the discussion of claim 3, Nakajima discloses all of the limitations of the parent claim. Nakajima, however, discloses that the image sensor is a CCD, not an XY addressable image sensor, as claimed. Official Notice is taken as to the fact that it is well known in the art to substitute CMOS image sensors, which are a type of XY addressable image sensor, for CCD sensors. The advantages of CMOS sensors over CCD sensors include a better fill factor (i.e. less room needed on chip for registers), ease of

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manufacture, reduced power consumption, and on-chip integration. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the CCD sensor of Nakajima with a CMOS sensor. Additionally, it is well known in the art that CMOS sensors can begin the exposure period of pixels simultaneously. This is sometimes referred to as a snapshot shutter. Such a shutter operation is beneficial in the capture of dynamic scenes. Therefore, one of ordinary skill in the art could have easily replaced the CCD sensor of Nakajima with a CMOS sensor and still have the sensor operate in the same manner.

13. As for *claim 6*, a CMOS sensor is a type of XY addressable image sensor.

Allowable Subject Matter

14. Claims 2 and 4 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

15. The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 2, the primary reason for indication of allowable subject matter is that the prior art fails to teach or reasonably suggest a memory unit for storing image information formed by said image pickup device before a pre-flashing operation by the flash; and when said pickup device starts a during-preflash exposure operation, said control circuit causes said pickup device to read the image information which have been stored in said memory unit, instead of an -image to be formed by said image pickup device at the time of the pre-flash, and outputs the read image information to a downstream image recording apparatus or image output apparatus.

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As for claim 4, the primary reason for indication of allowable subject matter is that the prior art fails to teach or reasonably suggest a memory unit for storing image information formed by said image pickup device before said image pickup device forms an image before the pre-flash; and when said pickup device starts a before-preflash exposure operation, said control circuit causes said pickup device to read the image information which have been stored in said memory unit, instead of images to be formed by said image pickup device before the pre-flash and during the pre-flash, and outputs the read image information to a downstream image recording apparatus or image output apparatus.

16. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOHN M. VILLECCO whose telephone number is (571)272-7319. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh Tran can be reached on (571) 272-7564. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/JOHN M. VILLECCO/
Primary Examiner, Art Unit 2622
March 4, 2009